

EDDYFI LYFT

Corrosion Assessment Redefined



CORROSION ASSESSMENT REDEFINED

Corrosion under insulation (CUI), corrosion blistering and scabs, flow-accelerated corrosion (FAC), corrosion under fireproofing (CUF) and corrosion under coatings are possibly the greatest unresolved asset integrity problems in the industry. Other methods used to measure wall thickness under liftoff, without removing insulation, all have severe limitations and existing pulsed eddy current (PEC) solutions rely on outdated technology. Let's redefine corrosion inspection.

The Evolution of PEC

Lyft® is a high-performance solution reinventing PEC.

The patented Eddyfi® solution features:

- State-of-the-art portable instrument
- Standard pulsed eddy current array (PECA™) technology
- Real-time C-scan imaging
- Fast data acquisition
- Grid and encoded dynamic scanning modes

Lyft can scan through thick insulation, as well as aluminum, stainless steel, and galvanized steel weather jackets.

Powerful Embedded Software

The user-friendly multi-touch software includes several innovative features, including real-time C-scan imaging, complete wall thickness measurements (ID and OD corrosion), as well as complete inspection management and reporting capabilities.

Undersizing is a well-known phenomenon for PEC where defects smaller than a probe's averaging area appear shallower than they really are. The Lyft compensated wall thickness (CWT) tool mitigates this phenomenon by more precisely quantifying the minimum wall thickness of a specific region in a C-scan.

Reliable and Repeatable Results

The Lyft software is packed with automation and advanced algorithms that remove operator-specific dependence, thanks to the power of SmartPULSE™ technology. It automatically optimizes pulser and receiver parameters (gain, duration, time gates, filters, etc.). SmartPULSE also optimizes wall thickness measurements, which ensures optimal performance and repeatability.

The Best of PEC Made Portable

Lyft is sealed and designed for IP65. Its magnesium alloy casing is tough, water and dust resistant, and cools without any external air exchange. The adjustable stand, the top handle, and four corner anchor points make it practical for on-site inspections. The embedded Windows® PC offers standard connect-anywhere capabilities and advanced productivity tools that optimize field testing. The premium quality 26.4 cm (10.4 in) LED display is optically bonded, non-reflective, comes with 3 mm (1/8 in) strengthened glass, and is designed for gloved hands, under any lighting conditions. The system also comes with two, hot-swappable batteries for extended autonomy.

Heavy-duty bumpers, hooked for harnessing

10.4", non-reflective, backlit, high-resolution multi-touch display

Rugged, easy-to-use keypads

Rugged portable casing designed for IP65



A NEW KIND OF PEC

Eddyfi's dedicated application engineers and R&D team combined a world-class portable instrument with advanced software, sensors and accessories to transform PEC into a technique that reaches its full potential. Who else but Eddyfi would reinvent an eddy current technique, integrate high-productivity array to the solution and completely redefine CUI programs?

Optimized Performance for Wall Thickness and Liftoff

The Lyft solution includes several sizes of plug-and-play probes for the right balance between wall thickness and liftoff.

The patented high-resolution PECA probe is part of a complete solution dedicated to providing the best estimate of remaining wall thickness under surface-forming scabs and blisters. Using an array of dual sensors capable of spatial triangulation, the probe enables the detection of small defects, in a single-pass coverage of 75 mm (3 in) in grid or encoded, dynamic-scanning modes. It supports metal thickness ranging from 3–19 mm (0.12–0.75 in) and liftoff from 0–50 mm (0–2 in).

The 6-element PECA probe is designed to improve overall inspection productivity as much as 10 times. The probe is capable of a single-pass coverage of 457 mm (18 in) in grid or encoded, dynamic-scanning modes. It supports metal thickness ranging from 6–25 mm (0.25–1 in), insulation from 0–102 mm (0–4 in), and aluminum/stainless steel weather jackets. Displaying C-scans has never been this fast.

The single-element PEC probe family supports metal thickness up to 100 mm (4 in), insulation as thick as 300 mm (12 in), and stainless steel/aluminum/galvanized steel weather jackets. A range of specialized probes are available to tackle underwater inspections, the in-service inspection of storage tank floor annular rings, and insulated structures protected by galvanized steel weather jackets.

Analysis and Reporting Software

Lyft Pro desktop software enables advanced Lyft data analysis through the same graphical user interface as the Lyft software, making it easy to learn and benefit from larger data layouts. The software also has features to generate richer reports and tools to bridge calibration parameters between scan zones.

SurfacePro 3D is an advanced visualization and reporting software designed to automatically create 3D components, overlay and stitch C-scans at data import.

Get Eddyfi Certified Anywhere

We are geared to offer PEC training: a blend of e-learning and hands-on training at our offices or yours that will give you the necessary knowledge and skills to efficiently use PEC when inspecting assets.

Details at: www.eddyfi.com/pulsed-eddy-current-pec-probes



SPECIFICATIONS

INSTRUMENT		
Dimensions (W × H × D)		355 × 288 × 127 mm (14.0 × 11.3 × 5.0 in)
Weight (With batteries)		6.6 kg (14.5 lb)
Volume		13 L (791 in ³)
Power requirements		100–240 VAC, 50–60 Hz
Power supply		Direct VAC or onboard batteries
Batteries	Type	Li-ion, rechargeable, DOT compliant
	Typical Life	6–8 hours
Video output		HDMI
Number of channels		6 (Lyft-GDA)
Display	26.4 cm (10.4 in)	
	Non-reflective (AR coating)	
	Anti-fingerprint (oleophobic coating)	
	3 mm (1/8 in), chemically strengthened glass cover	
	Optically bonded LCD and touchscreen	
Passive backlight enhancement		
Storage		SSD, 100 GB
Cooling		Sealed and fanless
Encoder		Quadrature (GDA model only)
Connectivity	Gigabit Ethernet, Wi-Fi, Dual Mode Bluetooth® 2.1, 2.1+EDR,	
	3.0, 3.0+HS, 4.0 (BLE), USB 2.0 (×3)	
Probe recognition and setup		Automatic

PERFORMANCE		
Dynamic data acquisition		Up to 15 points/s
Dynamic scan speed		Up to 75 mm/s (3 in/s)
Grid mapping scan speed		Instant, less than 1 second (typical)
SmartPULSE	Automatic PEC pulser-receiver parameters config.	
	Full thickness sensitivity (OD and ID defects)	
	Reliable measurements with liftoff variations, weather jacket overlaps, straps, corrosion scabs. 1-point calibration (on nominal or known thickness), auto-normalization, repeatability optimization	

PROBES*		
Features	Remote control keypad	
	Lyft 27-pin Fischer connector	
	Heavy-duty 5 m (16.4 ft) cable	
Nominal wall thickness		Up to 100 mm (4 in)
Liftoffs		0–300 mm (0–12 in)
Smallest detectable defect volume		15% of footprint volume
Minimum measurable remaining wall thickness		15% from nominal
Weather jackets	Stainless steel up to 1.5 mm (0.06 in)	
	Aluminum up to 1 mm (0.04 in)	
	Galvanized steel up to 1.0 mm (0.04 in)	
Pipe diameters		25 mm (1 in) up to flat surfaces
Test temperatures	Carbon steel: –150–500 °C (–238–932 °F)	
	Max. weather jacket, direct contact: 70 °C (158 °F)	
	Max. weather jacket, probe shoe: 120 °C (248 °F)	

ENVIRONMENTAL		
IP rating		Designed for IP65
Operating temperature		0–40°C (32–104°F)
Operating humidity		95%, non-condensing
Compliance		ASME, EN 61010-1, CE, WEEE, FCC Part 15B, ICES-003, AS/NZS CISPR 22, RoHS

APPLICATION SPECIFIC PROBES		
Available models (Visit website for details)	• Scab and corrosion blisters	
	• Splash zone	
	• Underwater	
	• CUI under galvanized steel cladding	
	• Tank floor	

*Refer to the *Understanding PEC Probe Selection and Footprint* on www.eddyfi.com/lyft for specific item details.